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“Step Out From the Old to the New”

IS 1046 (1992): Cash boxes s [MED 24: Security Equipment]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक
रोकड़ बक्सा — विशिष्ट
(तीसरा पुनरीक्षण)
Indian Standard
CASH BOXES — SPECIFICATION
(*Third Revision*)

UDC 683.341

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BUREAU OF INDIAN STANDARDS
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FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Safes Sectional Committee had been approved by the Heavy Mechanical Engineering Division Council.

This standard, first published in 1957, was revised in 1970 and 1979. This (third) revision has been undertaken to incorporate following changes:

- a) The body of the cash boxes may be made of one or two plates.
- b) The thickness of sheet used for manufacture of body and lid of cash boxes is reduced from 3 mm to 2.5 mm.
- c) The thickness of sheet used for manufacture of coin tray is increased from 0.8 mm to 1.0 mm; and
- d) Moulded plastic is allowed to be used for coin tray.

Cash boxes of various kinds are being manufactured in India from a long time to cater to the needs of government departments like the Posts and Telegraphs, treasuries, railways, banks, companies and general public. Several improvements in the manufacture and design of cash boxes have been made from time to time.

As the practice followed in the manufacture of cash boxes cannot be judged when these are in the finished stage, it has been found necessary to stipulate that the purchaser or his authorized agent should have free access to the works to fully satisfy himself in regard to the manufacture.

Cash boxes are vulnerable to attack by a wedge-shaped lever and protection against this form of attack has been kept in view while preparing this standard. The lid span is kept longer at the front and rear edges, and double bent flanges have been specified for stiffness and resistance against levering open action.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (revised)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Amend No. 2 to IS 1046 : 1992

**Table 1 Materials to be Used in the Manufacture of Different Parts
of Cash Boxes and Their Locks
(Clause 4)**

Sl No.	Part	Material
(1)	(2)	(3)
1	Body, fixed bottom, detachable bottom, lid, coin tray, slotted lugs, locker case and cover plate	Mild steel conforming to IS 2062 or Mild steel conforming to IS 1079 or Hot rolled steel plates, strips and flats conforming to IS 5986
2	Drill proof plate	Carbon steel containing minimum 0.4 percent carbon, and with a hardness of 55 HRC minimum or MS plate case hardened to 50 to 55 HRC
3	Handles and other non-ferrous components including those of lock body	Cast brass conforming to Grade 3 of IS 292 or The bronze conforming to Grade 1 of IS 306 or Zinc base alloy conforming to IS 713 or Suitable stainless steel conforming to IS 6911 or IS 6603
4	Levers	Sheet brass conforming to CuZn 40 of IS 410
5	Lever springs	Phosphor bronze wire conforming to Grade 1 of IS 7608

Amend No. 2 to IS 1046 : 1992

(Page 5, Annex A) — Substitute the following for the existing matter:

ANNEX A
(Clause 2)

LIST OF REFERRED INDIAN STANDARDS

<i>IS No.</i>	<i>Title</i>
292 : 1983	Leaded brass ingots and castings (<i>second revision</i>)
306 : 1983	Tin bronze ingots and castings (<i>third revision</i>)
410 : 1977	Cold rolled brass sheet, strip and foil (<i>third revision</i>)
419 : 1967	Putty, for use on window frames (<i>first revision</i>)
713 : 1981	Zinc base alloy ingots for die castings (<i>second revision</i>)
1079 : 1994	Hot rolled carbon steel sheet and strip (<i>fifth revision</i>)
2062 : 1992	Steel for general structural purposes (<i>fourth revision</i>)
2074 : 1992	Ready mixed paint, air drying, red oxide-zinc chrome, priming (<i>second revision</i>)
2704 : 1983	Brass wire for cold headed and machined parts (<i>first revision</i>)
2932 : 1993	Enamel, synthetic, exterior (a) undercoating (b) finishing (<i>second revision</i>)
5986 : 1992	Hot rolled steel plates, sheets, strips and flats for flanging and forming operation (<i>first revision</i>)
6603 : 1972	Stainless steel bars and flats
6911:1992	Stainless steel plate, sheet and strip (<i>first revision</i>)
7608 : 1987	Phosphor bronze wire for general engineering purposes (<i>first revision</i>)

(ME 24)

AMENDMENT NO. 1 AUGUST 1994
TO
IS 1046 : 1992 CASH BOXES — SPECIFICATION
(Third Revision)

(*Page 3, Table 1, Sl No. 1 and 3*) — Substitute the following for the existing matter:

- | | | |
|----|--|---|
| ‘1 | Body, fixed bottom, detachable bottom, slotted lugs, lock case and cover plate | Mild steel conforming to IS 2062 : 1992 or
Mild steel conforming to IS 1079 : 1988 |
| 3 | Handles and other nonferrous components including those of lock body | Cast brass conforming to Grade 3 of IS 292 : 1983;
or
Tin bronze conforming to Grade 1 of IS 306 : 1983;
or

Zinc base alloy conforming to IS 713 : 1981; or
Suitable stainless steel conforming to IS 1570 (Part 5) : 1985 |

(*Page 4, clause 7.1.1, second line*) — Substitute ‘IS 2074 : 1992’ for ‘IS 2074 : 1983’.

(*Page 5, Annex A, IS 226 : 1975*) —Delete.

(*Page 5, Annex A*) — Substitute the following for IS 1570 : 1961, IS 2062 : 1984 and IS 2074 : 1979:

- | | |
|--------------------------|--|
| ‘IS 1570 (Part 5) : 1985 | Schedules for wrought steels : Part 5 Stainless and heat resisting steels (<i>second revision</i>) |
| IS 2062 : 1992 | Steel for general structural purposes (<i>fourth revision</i>) |
| IS 2074 : 1992 | Ready mixed paint, air drying, red oxide-zinc chrome, priming (<i>second revision</i>)’ |

Indian Standard

CASH BOXES — SPECIFICATION

(Third Revision)

1 SCOPE

This standard covers the requirements for cash boxes.

2 REFERENCES

The standards listed in Annex A are necessary adjuncts to this standard.

3 SIZE AND DIMENSIONS

The size, shape and leading dimensions of cash boxes shall be as given in Fig. 1 to 4.

4 MATERIAL

The different parts of cash boxes (*see* 5 and 6) shall be manufactured from materials specified in Table 1.

NOTE — Keeping in view the availability of indigenous materials and testing facilities with the manufacturer, some physical methods of tests have been given in Annex B for guidance only.

5 CONSTRUCTION AND WORKMANSHIP

5.1 Fabrication

The cash boxes shall be well made and free from defects. Workmanship shall be good. The

body, cover and main bolt of the lock shall be free from blow holes, casting and other surface defects. Surfaces of the bolts, which are to be in sliding contact, shall be finished smooth and true.

5.2 Body

The body shall be bent out of a single or two mild steel plates to the shape illustrated in Fig. 1 which shows sectional perspective of the body for clarity. The plate shall be bent uniformly by pressure and not by hammer blows. The recess at top, which receives the lid, shall be deep enough to allow the lid in closed position to remain 6 to 10 mm below the top edge of the body. All the eight corners, as also the single joint of the body shall be strongly welded and filed smooth. The corner joints shall be welded to ensure full penetration.

5.3 Bottom

One fixed and one detachable bottom, both of mild steel, shall be provided. The fixed bottom (*see* B in Fig. 3) shall be inserted from inside and lap welded to the bottom flanges of the body. It shall have two or three recesses for

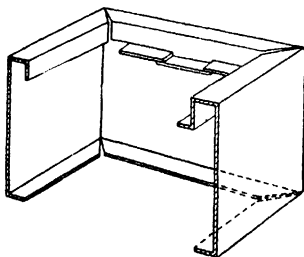


FIG. 1 SECTIONAL PERSPECTIVE OF BODY
SHOWING BEND CONSTRUCTION

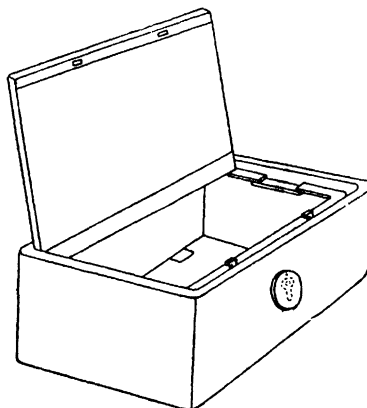
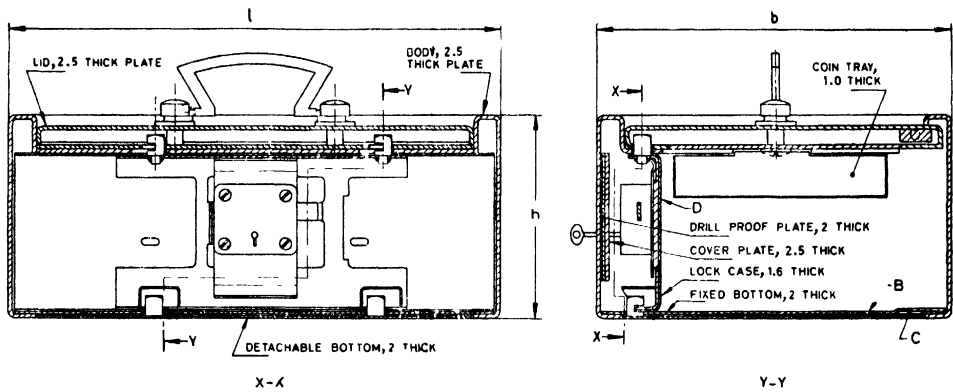


FIG. 2 CASH BOX (WITH LID OPEN)



Nominal Size	$l \pm 2.5$	$b \pm 2.5$	$h \pm 2.5$
1	355	255	150
2	455	300	225

All dimensions in millimetres.

FIG. 3 DIMENSIONS FOR CASH BOXES

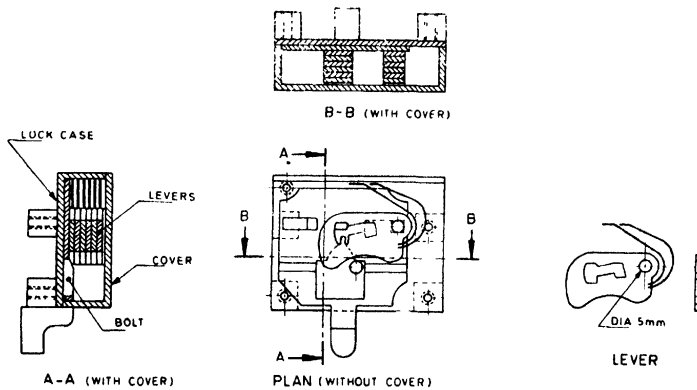


Fig. 4 Lock

cash boxes of Nominal Size 1 or 2 respectively which, in conjunction with the rear bottom flange the body, shall form pockets (see C in Fig. 3) to engage the lugs in the rear edge of the detachable bottom. The front edge of the detachable bottom shall be provided with two mild steel slotted lugs for cash boxes of Nominal Size 1 and three mild steel slotted lugs for cash boxes of Nominal Size 2 to engage the lower bolts of the cash box lock mechanism, when the lid is locked. Suitable holes shall be provided on the detachable bottom so that it can be fixed to a table or counter.

5.4 Lid

The lid shall be of mild steel with double-bent flanges along its front edge, preferably double-bent flanges along its rear edge and single-bent flanges on the sides. The four corners of the lid shall be strongly welded. The front inside flange shall be provided with rectangular slots to receive and engage the top locking bolts. The back edges of the lid shall be reinforced with a rectangular or round mild steel section which shall also act as rigid support for the pivot pins. The lid, when closed, shall snugly fit into the recess formed by the body flanges and the clearance at any place between the lid and the body shall be not more than 0.8 mm. When locked, the lid shall not have a play of more than 0.5 mm in the direction in which the lid opens.

5.5 Hinges

Hinges shall be of the pin pivot type and shall be made of mild steel. The pivots shall be accurately machined and fitted so as to allow the lid to move without appreciable friction or play. They shall not be accessible from the outside. The pivot pins shall be not less than 8 mm dia.

5.6 Bolts

Bolts shall be of cast brass or tin bronze (gun metal) or mild steel bar. There shall be two main bolts for locking the lid and two auxiliary bolts for locking the detachable bottom to the box for cash boxes of Nominal Size 1 and three main bolts for locking the lid and three auxiliary bolts for locking the detachable bottom to the box for cash boxes of Nominal Size 2. The layout of the boltwork and the lock shall be generally as shown in Fig. 3. The bolts shall slide smoothly when the key is turned in the lock and fit snugly into the slots on the lid. The lock and boltwork shall be mounted on the firm base of a lock case (see D in Fig. 3) which shall be firmly secured to the body of cash box from inside.

5.7 Handle

The handle, when made of cast brass or die-cast alloy, shall be nickel plated or chromium plated or anodized or powder coated.

Table 1 Materials to be Used in the Manufacture of Different Parts of Cash Boxes and Their Locks
(Clause 4)

Sl No.	Part	Material
(1)	(2)	(3)
1	Body, fixed bottom, detachable bottom, lid, coin tray, slotted lugs, lock case and cover plate	Mild steel conforming to IS 226 : 1975 or Mild steel conforming to IS 2062 : 1984 or Mild steel conforming to IS 1079 : 1988
2	Drill proof plate	Carbon steel containing minimum 0.4 percent carbon, and with a hardness of 55 HRC minimum or MS plate case hardened to 50 to 55 HRC
3	Handles other nonferrous components including those of lock body	Cast brass conforming to grade 3 of IS 292 : 1983 or The bronze conforming to Grade 1 of IS 306 : 1983 or Zinc base alloy conforming to IS 713 : 1981 or Suitable stainless steel conforming to IS 1570 : 1961
4	Levers	Sheet brass conforming to CuZn 40 of IS 410 : 1977
5	Lever springs	Phosphor bronze wire conforming to Grade 1 of IS 7608 : 1975

5.8 Lock

The cash box shall be fitted with a high quality lock. The general arrangement of the lock shall be as shown in Fig. 4. The lock shall be protected by a drill-resisting plate fitted to the body of the cash box in front of the lock (see Fig. 3).

5.8.1 Dimensions and Tolerances of the Lock

5.8.1.1 The leading dimensions of the lock and its components and tolerances thereon shall be those agreed to between the purchaser and the supplier.

5.8.1.2 General arrangement

The general arrangement of a typical lock shall be as shown in Fig. 4.

5.8.1.3 Fabrication

The body, cover and the bolts of the lock shall be free from blow-holes, casting and other surface defects. The surface of the body and of the bolts, which are to be in sliding contact shall be finished smooth and true. The case of the body (see Fig. 4) shall be provided with at least four clearing holes for fixing bolts of size M 5.

5.8.2 Levers

The lock shall be fitted with at least six levers. The levers may not be of uniform thickness but shall be smooth on both faces so as to obtain parallelism. The levers shall be machine-punched and shall not be less than 1.6 mm thick. The slots in the levers shall be accurately cut so as to minimize friction in their working. In case of dual control lock each lever shall have two slots for the passage of main and auxiliary bolt pins.

5.8.2.1 False (dummy) levers shall not be used.

5.8.2.2 Lever springs

Each lever shall be fitted with phosphor bronze springs with their ends securely lodged in to the slots cut in the lever. After fitting the spring, the slots shall be peened over at both sides. The springs shall be uniformly curved and shall be free from dents or scratches. When the levers are fitted into the lock, each spring shall rest against the back of the main body, so that the spring is kept under tension. The spring fitted into the levers shall stand the test given under **5.8.2.3**.

5.8.2.3 Test of lever springs

The spring fitted into the lever shall be pressed down so as to touch the top of the lever, and released. This shall be repeated six times in quick succession. At the end of the test, the springs shall regain its original position.

5.8.3 Key

Each lock shall be provided with duplicates of main and/or auxiliary keys as the case may be. Keys shall be made from stainless steel. The wards shall be evenly cut, clearly defined and free from burrs. The engaging ends of the key wards shall be rounded.

5.8.4 Unpickability

The lock shall be carefully and accurately made so as to render it unpickable.

5.8.5 Non-interchangeability

The workmanship shall be such that the keys of any two locks, which have the nearest lever combinations, shall be mutually non-interchangeable. In other words, no lock shall open by any key other than its own specific key. For this purpose, it is essential that, unless specifically required by the purchaser, no two locks shall have the same lever combination. A given combination of levers once used, shall not be used again unless the thickness of the levers and their numbers, or the radius of sweep or steps, or the increment in steps is altered.

6 INTERNAL FIXTURES

Unless otherwise specified by the purchaser, the cash box shall be provided with a coin tray having three compartments. It shall be made of mild steel of thickness as specified in Fig. 3 or from moulded plastic.

7 PAINTING

7.1 Before painting, all surfaces shall be thoroughly degreased and cleaned of rust and scale by pickling. the surfaces shall be phosphate treated before painting. The cash boxes shall then be painted inside and outside with enamel of the shade specified by the purchaser.

7.1.1 The primer paint used for painting shall conform to IS 2074 : 1983.

7.1.2 The filler material used shall be putty conforming to IS 419 : 1967.

7.1.3 The enamel used for undercoating and finishing shall conform to IS 2932 : 1974.

8 MARKING**8.1 Marking on Cash Boxes**

A metal plate showing the maker's name or trade-mark shall be affixed to the cash boxes.

8.2 Certification Mark

Details available with Bureau of Indian Standards.

8.3 Marking on Keys

The keys shall bear an identification number which shall not be the same as the serial number of the cash box.

9 INSPECTION

The purchaser or his authorized representative shall have free access to the manufacturer's work at all reasonable times to inspect cash boxes at various stages of manufacture.

10 PACKING

Each cash box shall be packed in accordance with the best trade practice with its lid shut but not locked. The keys shall be separately sealed in a cardboard or metal box and placed inside the cash box. The keys may also be packed and dispatched separately or delivered in some other manner if the purchaser so requires.

ANNEX A

(Clause 2)

LIST OF REFERRED INDIAN STANDARDS

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
226 : 1975	Structural steel (standard quality) (<i>fifth revision</i>)	1570 : 1961	Schedules for wrought steels for general engineering purposes
292 : 1983	Leaded brass ingots and casings (<i>second revision</i>)	2062 : 1984	Weldable structural steel (<i>third revision</i>)
306 : 1983	Tin bronze ingots and castings (<i>third revision</i>)	2074 : 1979	Ready mixed paint, air drying, red oxide-zinc chromic, priming (<i>first revision</i>)
430 : 1977	Cold rolled brass sheet, strip and foil (<i>third revision</i>)	2704 : 1983	Brass wire for cold headed and machined parts (<i>first revision</i>)
419 : 1967	Putty, for use on window frames (<i>first revision</i>)	2932 : 1974	Enamel, synthetic exterior (a) undercoating, (b) finishing (<i>first revision</i>)
713 : 1981	Zinc base alloy ingots for die casting (<i>second revision</i>)	7608 : 1987	Phosphor bronze wire for general engineering purposes (<i>first revision</i>).
1079 : 1988	Hot rolled carbon steel sheet and strip (<i>fourth revision</i>)		

ANNEX B

(Clause 4)

REQUIREMENTS FOR MATERIALS OF CASH BOXES CONFORMING TO
INDIAN STANDARDS AND METHODS OF TEST

<i>Sl No.</i>	<i>Material</i>	<i>Typical Examples</i>	<i>Requirements For Material</i>
1	Mild steel	Fe 410-S of IS 226 : 1975	Finished components shall satisfy the following bend test : 'The component part when cold shall withstand without developing cracks being doubled over either by pressure or by blows from hammer until the internal radius is equal to the thickness of the component part'.
2	Cast brass	Grade 3 of IS 292 : 1983	Copper content shall be not less than 60 percent. Castings shall be free from blow holes, surface and other casting defects.
3	Brass sheet	CuZn 40 of IS 410 : 1977	The brass sheet shall meet the same bend test as specified for mild steel.
4	Brass wire	IS 2704 : 1983	Copper contents shall not be less than 55 percent and tensile strength 350 MPa minimum.
5	Phosphor	Grade 1 of IS 7608 : 1987	The wire used for springs shall bronze wire comply with the rest given below : 'The lever spring shall be fitted into the lever as specified in 5.8.2.3 and shall be pressed down so as to touch the top edge of the lever and released. This shall be repeated six times. At the end of the test the spring shall regain its original position'.

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